



*Transmitted Via Electronic Mail*

June 13, 2014

Emergency and Remedial Response Division  
U.S. Environmental Protection Agency, Region 2  
290 Broadway, 19th Floor  
New York, New York 10007-1866  
Attention: Ms. Jennifer LaPoma, Remedial Project Manager

Re: Quality Assurance Project Plan – Rev. 2  
Lower Passaic River Study Area – River Mile 10.9: Pipeline Survey  
Unilateral Administrative Order  
USEPA Region 2 CERCLA Docket No. 02-2012-2020

Dear Ms. LaPoma:

Submitted herewith is the revised Quality Assurance Project Plan (QAPP) for the above referenced matter. The QAPP has been modified to address the United States Environmental Protection Agency's (USEPA's) comments provided in a May 29, 2014 correspondence to Tierra. Attached is a table summarizing EPA's comments and Tierra's responses along with a RLSO version and non-RLSO version of the QAPP. Please note that Standard Operating Procedures (SOPs) 1, 2, 4 and 5 did not have any changes and thus are not included in the RLSO.

As discussed on our June 11 telephone conversation, please note the following:

- University of Illinois (UoI) does not have a Quality Management Plan (QMP) for this work and as such none will be submitted to USEPA.
- In consideration of the above and USEPA's recommendation from your May 29, 2014 QAPP review letter, Tierra will conduct physical measures (in-river probing) to obtain pipeline depth information. This probing work will be conducted subsequent to the geophysical survey by UoI; the data collected by UoI will be used to better define/focus the probing work. The probing will be conducted by Ocean Surveys Inc. (OSI) or alternate similar contractor that is familiar with the Passaic River and has been approved by USEPA on previous Passaic River activities. We are confident that the physical probing information, supplemented with the pipe design drawings (provided by the Jersey City Municipal Utilities Authority) and UoI's geophysical survey results, will provide a solid set of data that can be utilized to understand the pipe depth.
- The schedule for this work will be as follows:
  - *August 2014*: Implement Geophysical Work by UoI as per current QAPP.
  - *August/September*: Process Survey Data by UoI
  - *September/October*: Data Quality Review and Preparation/Submittal of Geophysical Survey Report

- *September/October: Preparation and Submittal of OSI's Physical Probing QAPP (incorporating the results of the geophysical survey)*
- *30 Days after USEPA Approval of Physical Probing QAPP: Implement QAPP*
- *60 Days after completion of field work: Submit final Report on Pipeline Survey*

As identified in Tierra's response to USEPA's comments, we will provide next week full Curriculum Vitae for those UoI personnel that will actually be using the geophysical equipment. Additionally, an SOP (SOP #6) and manufacturer's information for the Total Station will be submitted next week as well.

If you have any questions, please contact me at (732) 246-5851.

Sincerely,

Tierra Solutions, Inc.



Paul S. Brzozowski  
Project Coordinator  
On behalf of Occidental Chemical Corporation  
(as successor to Diamond Shamrock Chemicals Company)

Attachments

cc:

Sarah Flanagan, USEPA  
Ray Basso, USEPA  
Stephanie Vaughn, USEPA  
Derrick Vallance, Maxus Energy  
Dave Rabbe, Tierra  
Carol Dinkins, Vinson & Elkins

*File: Passaic/10.9 UAO/Agency/Correspondence*

**Tierra's Responses to  
USEPA Comments (May 29, 2014) on Quality Assurance Project Plan (QAPP) for River Mile  
10.9 Pipeline Surveys: Geophysical Surveys: Parametric Echosounder and Ground  
Penetrating Radar  
Revision 1, Dated May 2014**

	<b>EPA COMMENTS (May 29, 2014)</b>	<b>ACTION PLAN</b>
<b>No.</b>	<b>General Comments</b>	
1	Please specify how field crews plan to maneuver the GPR near trees along the shoreline.	Starting and ending points for the GPR transects will be established so as to avoid trees in the area. In the vicinity of the shoreline, a transect will be located as close to the tree line as possible.
2	Please verify if any attempts will be made to take the GPR on the mudflat during low tide to try and overlap with, or measure in proximity to, the PES data.	There will be no GPR surveying on the mudflat.
3	Specify how field crews will be able to receive GPS signals under the tree canopy along the shoreline, or will these areas just be omitted from the survey?	We will not be using GPS under the tree canopy. Instead, we will establish positioning using a Total Station with equivalent accuracy. An SOP and manufacturer's information for the Total Station will be submitted to USEPA.
4	Please confirm if any comparison of the survey data results to any existing data (e.g., OSI's magnetometer data which had a few "hits" near the pipeline locations) will be conducted?	A Final Report will be submitted upon completion of the geophysical survey work <u>and</u> the physical measurements/probing (see comment 15). This Report will include all data collected and as well reference the design drawing obtained from Jersey City Municipal Utility Authority.
	<b>Specific Comments:</b>	
5	Section 1, Intro, not numbered: In the first paragraph, please remove the words "on Consent" from the reference to the UAO, i.e., "the Unilateral Administrative Order on Consent." The same error appears on Worksheet #2, page 1	OK; Tierra will make the requested change.
6	Section 1.1, Background Information, not numbered: In several locations, including in the two paragraphs on page 6, the document refers to the CPG removal at 10.9 as a "remediation". This term should not be used, as this is a removal action, not a remedial action. Please check text for all occurrences and revise text accordingly.	OK; Tierra will make the requested changes.
7	Worksheet 1, Page 1 of 1: The Investigative Organization Project Manager and Project QA Manager may need to be revised pending EPA's receipt, review, and response to UOI's QMP.	No change will be made to the QAPP per agreement between EPA and Tierra to use this remote-sensing activity to inform physical probing.

8	Worksheet 2, page 1 of 2: Please revise Item 7 herein as per comment 5 above.	OK; Tierra will make the requested change.
9	Worksheet 2, page 2 of 2: At the top of the page, Tierra is identified as Project Coordinator. The Project Coordinator is a person, i.e., Paul Brzozowski. Please revise accordingly.	OK; Tierra will make the requested change.
10	Worksheet 3: It is unclear why someone from the University of Birmingham, in the UK, Greg Smith is the GPR task lead. Please clarify this, what his relationship is to UOI, and what his qualifications are, in a response back to EPA.	Dr. Sambrook Smith and Professor Best have worked extensively on GPR projects together over the past 14 years and Dr. Sambrook Smith has great experience in deploying and using a range of GPR for subsurface sedimentary characterization. He possesses a BSc and PhD in Geography from the Universities of Leeds and Sheffield, UK, respectively and has published widely on GPR applications in sedimentary geology. Due to his experience and past collaboration with Best, he was chosen as the ideal person to lead the land-based GPR survey. Dr. Sambrook Smith is currently a Senior Lecturer at the University of Birmingham, UK.
11	Worksheet 5: The land surveyor needs to be identified. Please provide this information in the revised QAPP.	DPK Consulting, L.L.C. 147 Union Ave., Suite 1C Middlesex, NJ 08846 David R. Avery P. L. S. (732) 764-0100 <a href="http://www.dpkconsulting.net/">http://www.dpkconsulting.net/</a>
12	Worksheet 7: Greg Smith's responsibilities are listed as "perform GPR task." Please refer to comment 9, above.	With clarification that EPA's Comment 12 was referring to previous Comment 10, not 9, please see response to Comment 10, above.
13	Worksheet 8, Page 1: The text states HAZWOPER 40-hr training is not required for all workers "due to the non-invasive nature of the work." EPA does not agree with this statement as it is possible that workers surveying on mudflats/side-slopes/shorelines may come in direct contact when completing the GPR survey. Additional exposure from contact with bottom sediments while completing the bar check or sound velocity cast with the PES survey may also occur. Based on a review of the requirements, these workers will be on site for a specific, limited task and as such would need to comply, at minimum, with 29 CFR 1910.120 (e) (3) (ii) and (iii) HAZWHOPER. Please provide a response to EPA regarding this matter and revise the QAPP and task list in HSP accordingly.	Workers on the boat will be HAZWOPER certified, either 40-hour or 24-hour, depending upon their potential annual exposure.  Workers performing the GPR survey may not be HAZWOPER certified since they will not be doing any invasive work and will not be doing any work on the mudflat. Further, it would be inconsistent to require workers in an area freely used by the public to be required to have HAZWOPER training.

14	Worksheet 8: it is unclear if there are special training requirements for the personnel in order to operate the GPR, GPS, and PES that will be used. Please provide EPA with a response and clarify in the revised version of the QAPP.	Personnel using these instruments have extensive past experience with this equipment and no further training is required. Full Curriculum Vitae are available on request.
15	Worksheet 10, Page 1 of 2: In the cover letter to this enclosure, EPA strongly recommends that Tierra consider additional physical measures to validate the results of the GPR and PES surveys. Any revision to the SOW, including additional physical measures, should be reflected in this worksheet.	Per agreement with EPA, Tierra will use the remote sensing geophysical survey techniques to inform a physical probing effort to confirm, if possible, the locations of the pipelines. Tierra will develop a scope of work/QAPP for physical probing and, with USEPA approval conduct the additional work.
16	Worksheet 11, Page 1 of 4: Under “who will use the data?” the QAPP refers to USEPA and Partner Agencies, Tierra and the CPG. Please include Occidental in this list before Tierra.  Under “what will the data be used for” instead of referring to “USEPA and the CPG,” please refer to “USEPA, Occidental, and the CPG.”	OK; Tierra will make the requested change.  OK; Tierra will make the requested change.
17	Worksheet 11, Page 2 of 4: In the fifth paragraph under “How much data are needed?” reference is made to the “Field Team Leader.” As this is the first time this title has been used in the document, please clarify who that is or revise the text. This same title also appears in Worksheet 14, on page 2 of 3.	OK; Tierra will make the requested change.
18	Worksheet 11, Page 4 of 4: Under “When will the data be collected?” please update to Summer 2014.	OK; Tierra will make the requested change.
19	Worksheet 16, Page 1 of 1: Please update all these dates.	OK; Tierra will make the requested change.
20	Worksheet 29, Page 2 of 2: Data storage or retrieval says that data and records will be made available to USEPA in accordance with the AOC (USEPA 2004). The reference should be to the UAO (USEPA 2012).	OK; Tierra will make the requested change.
21	Worksheet 35, Page 1 of 1: UOI Survey manager “or designee” is responsible for validating equipment, field records and database output. Please clarify and revise to reflect who the designee is/will be.	The objective of establishing that a designee may perform a task is to allow the person responsible to delegate certain activities while maintaining responsibility and that, prior to the event, it is not possible to identify the person to whom the task will be delegated. Tierra will add additional detail.
22	Standard Operating Procedure No. 3, Parametric Echosounder Surveying: The SOP is lacking a detailed discussion regarding data timing and synchronization. Please see comments directly below and clarify to EPA and revise accordingly in the QAPP:	The PES data collection and GPS timing stream will be synchronized as the GPS stream is read directly into the PES data stream during data collection.

	19a. Please clarify how fast the vessel be making transits. This is important if data is only being recorded once per second, as was described in the main body of the QAPP.	The boat speed will be kept to a minimum SOG (speed over ground) to ensure continuous bottom coverage. GPS data will be recorded at a rate of 1Hz but the PES data will be recorded at a higher rate (depending on the parameters selected).
	19b. Is there any system latency for which Tierra needs to account (i.e., offset between measurement time and the time that is actually stamped with that measurement)? Please confirm if Tierra will be testing for latency?	There is no latency involved here as the PES data and GPS stream are tagged simultaneously, and the GPS signal is read directly into the PES processor.